

## **REMARKS**

The Examiner is thanked for indicating the withdrawal of the prior rejections. The issues outstanding in the present Office Action, accordingly, are the new rejections under 35 U.S.C §103 and the double patenting rejection. Reconsideration of these issues, in view of the following discussion, is respectfully requested.

### **Rejection Under 35 U.S.C §103**

Claims 1 and 6 - 12 have been rejected under 35 U.S.C §103 over WO '260 (commonly assigned with the present application) and Mizuide et al. '471. Reconsideration thereof is respectfully requested. WO '260 teaches a method for improving the adhesion of fluorinated resins to metal materials, with the use of a composition comprising at least two of (a) PVDF resin, (b) an acrylic or methacrylic polymer having functional groups with bonding properties or affinity to metals, and (c) a vinylidene fluoride copolymer resin. As noted at page 4 of the application, this composition can be used as an adhesive agent to stick a fluorinated resin to a metal. As admitted at page 3 of the Office Action, however, the WO does not expressly teach that in this composition the PVDF resin (a) or the vinylidene fluoride copolymer (c) are chemically modified by partial dehydrofluorination followed by oxidation.

However, in order to remedy this deficiency, the Office Action cites Mizuide '471. It is respectfully submitted that such combination would not result in the presently claimed material and, moreover, that one of ordinary skill in the art would not look to the teachings of Mizuide for combination with the materials of the primary reference.

First, it is respectfully submitted that the materials produced in Mizuide et al. are not those recited in the present claims. Patentees teach, at column 2, lines 25 - 27, that base and peroxide can be added together at the same time, or in the order of base to peroxide (meaning that peroxide is added first, then base is added to it). Accordingly, in example 2, Patentees add 32% hydrogen peroxide, followed by potassium hydroxide. See column 4, lines 48 - 52. While it is recognized that claims such as the present claim 1 are product claims, it is important to note

that the description of fluoroprimer L2 is in product-by-process language. Each step of the process, dehydrofluorination followed by oxidation, produces a chemical change in the fluoprimer. Thus, one of ordinary skill in the art would expect that reversing the steps, as would be necessary to modify the disclosure of Mizuide to approximate that of the present claims, would result in a *different* product than that produced by the different order of steps of the reference.

Indeed, the examples of Mizuide support this conclusion. For instance, the process of Mizuide leads to more oligomers than polymers, since the examples show a reduction of molecular weight. See example 2, in which the initial molecular weight is  $5.3 \times 10^5$  grams per mol, and the final molecular weight is 4300 grams per mol. As a result, it would be apparent to one of ordinary skill in the art that degradation of the fluoropolymer occurs by Patentees treatment. By contrast, in the present application, the melt flow index of L2 after treatment is between 0.2 and 10 grams per 10 minutes (230°C, under 5 kilograms) which indicates that the product remains more of polymer than an oligomer. For one of ordinary skill in the art of fluoropolymers, it would be obvious that such melt flows cannot be obtained with oligomers of around 500 grams per mol. Thus, it would be evident to one of ordinary skill in the art that Mizuide does *not* product a product such as that presently claimed. Thus, even if one of ordinary skill in the art were to combine the references as alleged in the Office Action, such would not result in the presently claimed material.

It is further noted that the WO '260 defines a composition having at least two components, fluoroamines (a) or (c) and an acrylic or methacrylic polymer (b). Thus, a fluoroamine is not present singly, but is always in a mixture with an additional fluoroamine or the acrylic/methacrylic polymer. Thus, even the combination of references would *not* suggest newly added claim 16, which recites a fluoroprimer L2 which is *either* a PVDF homopolymer or vinylidene fluoride/HFP copolymer and does not read on additional components in this layer.

Moreover, regardless of the fact that the combination of references would not result in the presently claimed materials, it is submitted that it would *not* have been obvious to one of ordinary skill in the art to combine the references as argued in the Office Action. WO '260, the primary reference, is directed to improving the adhesion of fluorinate resins-to-metal materials.

It does so by using an adhesive comprising the fluororesin-containing composition noted above to adhere a fluoropolymer to a metal substrate. On the other hand, Mizuide discloses the production of a functional oligomer having a carboxyl group at both terminal ends, which can be used "as a chain-elongating agent for epoxy resin, isocyanate resin, etc., where as raw materials for a solvent-resistant sealant, an adhesive, a coating agent, etc." See column 4, lines 5 - 9. The offhand mention of the material as a "raw material" for an "adhesive", falls far short of suggesting the utility of the material for adhering a fluoropolymer to a metal. Indeed, adhesives, as is well known, must be carefully selected based on the materials which they are to adhere. Thus, one of ordinary skill in the art interpreting the disclosure of Mizuide, in view of the "reference example" at columns 5 - 6 which adheres two sheets of polytetrafluoroethylene film, would see only that the material of the reference can be used in adhering plastics. There is nothing which would suggest to one of ordinary skill in the art combination of the material with the substrates of WO '260, in which plastic is adhered to a metal. As such, Mizuide represents nonanalogous art to the WO '260 disclosure. The test for analogous art was set forth in *In re Clay*, 966 F.2d 656, 23 U.S.P.Q.2d, 1058 (Fed. Cir. 1992). The Clay test is a two-set analysis. First, it is necessary to ask whether the references are in the same field of endeavor. It is submitted that, in this case, they are not inasmuch as the primary reference is in the field of adhering plastic-to-metal, where as the secondary reference, at best, among its disparate utilities is in the field of adhering plastic-to-plastic. (It is submitted that such a narrowly defined field of endeavor is the proper analysis as evidenced by *In re Clay*, in which the court found that the field of injecting foam into a subterranean reservoir to flush out oil was *not* analogous to the field of injecting foam into an oil tank, in order to raise the oil to a level at which it would be pumped out. Also consistent is the recent decision in *In re Bigio*, ----- F3d. -----, -----U.S.P.Q. \_\_\_\_\_ (Fed. Cir. August 24, 2004) in which the court found toothbrush art to be analogous to hairbrush art, inasmuch as both areas involved brushes with handles.) In the present situation, in the present situation, while both references could be argued to involve adhesives, the primary reference involves adhesion between different materials than that of the secondary reference and, as such, is not the same field of endeavor.

Where the references are not in the same field of endeavor, the second prong of the *Clay*

test requires determining whether the same problem is addressed. Herein, in view of the differing substrates in the primary and secondary references, it is clear that the same problem *not* addressed, inasmuch as the concerns in adhering metal-to-plastic are clearly not the same as adhering plastic-to-plastic, inasmuch as the adherence to metal, a surface considerably different from plastic, imparts different requirements on the adhesive.

It is therefore respectfully submitted that the references do not constitute analogous art.

Accordingly, it is submitted that it would not have been obvious to combine the references, and if the references were combined, the result would not be the material presently claimed. It is therefore respectfully submitted that the rejection under 35 U.S.C §103 should be withdrawn.

#### Double Patenting

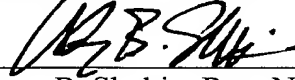
Claim 1 has been provisionally rejected under the doctrine of obviousness-type double patenting over claims 1 - 15 of copending application 10/088,560. Reconsideration of this rejection is again respectfully requested.

The cited application requires an epoxy primer. It is not seen that it would be obvious to delete that primer. Thus it is not seen that the claims therein suggest the presently claimed materials, particularly claims 16 and 17. Thus, withdrawal of this rejection is also respectfully requested.

The claims of the application are submitted to be in condition for allowance. However, should the Examiner have any questions or comments, he is cordially invited to telephone the undersigned at the number below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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